Beryllium Worker Safety – Module 3
Taking it in
Transcript

Narrator When we breathe, we take in air, which contains the oxygen that we need. The oxygen goes further and further into the branches of the lungs until it reaches the deepest parts of the lungs — the air sacs.

Each air sac is surrounded by blood vessels so thin, blood cells can only pass through one cell at a time. Here the oxygen passes through the air sacs and into the blood cells, which carry the oxygen to the rest of the body.

In addition to the oxygen — which our bodies need — the air also contains dust. We breathe it all the time. The fine hairs and moist surfaces of the nose, mouth, and throat trap the large particles. The body gets rid of this unwanted dust mostly by swallowing, sneezing, and spitting.

The fine particles — which are generally harmless — are taken deeper into the lungs. Scavenger cells that live in the lung travel around and see the dust. The scavenger cells then simply carry off or devour the dust particles.

Chronic Beryllium Disease develops in some people after they have inhaled beryllium and their lungs become the battlefield for a type of reaction. The first thing that happens is a person inhales particles of beryllium — in the form of dust or fumes — into the lungs.

Once the beryllium travels down through the branches of the lungs into the air sacks, the body then sees the beryllium particles and sets up a reaction. The scavenger cells see the particles, and try to gobble up and engulf the beryllium. Once they have gobbled up the particles, they present the beryllium to other cells called lymphocytes. The lymphocytes then divide, increase in number, and recruit other cells — building an army of cells inside the lungs, causing inflammation and scarring.

This thickens and damages the lungs. And once that thickening has occurred, then the lungs can't do the job that they're meant to do. They can't get the oxygen from the air that we breathe to go into the blood stream so it can be carried to the rest of the body.

So people with Chronic Beryllium Disease start to become starved for oxygen. And while healthy lungs can take in full breaths during normal breathing, lungs with Chronic Beryllium Disease have become thickened, scarred, and stiff. So breathing becomes shallower and more rapid, as the lungs try to get more oxygen. But with all this added effort, the amount of oxygen in the blood still remains low.

William Van Buskirk

Chronic beryllium Disease is a latent, progressive, debilitating, sometime fatal industrial disease that is treatable but not curable.

I've been treated for about 30 years now for this disease, and it is still progressing.

The disease would make me more susceptible to pneumonia, and a significant risk of lung cancer—plus the part about the heart damage.

More resources:
Other beryllium worker safety materials are available on the Department of Energy Website:
http://www.hss.energy.gov/healthsafety/wshp/be/

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I have less energy and less ability to do anything with vigor.

I'm sleeping with oxygen and I'm now taking naps with oxygen.

Of course the children were concerned about it, too. I just wasn't able to do as much as the thing progressed. I wasn't as able to be the participating father, I guess you'd say, that I should have been able to be with my family.

Glenn Bell The license plate on my van is "WHEEZIN" — so, it's just a description of the symptoms that the beryllium disease causes, and it was chosen to describe the wheezing conditions that the asthma attacks bring on. It's also my user ID for my America Online.

I try to throw a little humor into this. It helps to overcome some of the negative aspects of the disease to learn to laugh at yourself when you can.

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